



CHEMISTRY

BOOKS - ICSE

THE LANGUAGE OF CHEMISTRY

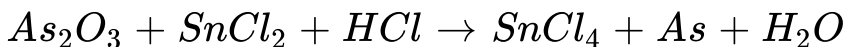
Example

1. Balance the following equation



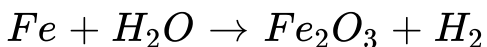
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2. Balance the following skeleton equation.



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3. Balance the following skeletal equation:



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4. Ammonia, calcium chloride and water are obtained by heating a mixture of ammonium chloride and calcium hydroxide.

Write a balanced equation of the reaction.

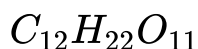
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5. Potassium dichromate reacts with hydrochloric acid to produce potassium chloride, chromium chloride, water and chlorine.

Write the skeletal equation of the reaction and balance it.

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6. Calculate the relative molecular masses (or molecular weights) of the following compounds : Cane sugar ,



Given that the relative atomic mass (in amu) of Cu = 63.5 ,

S=32 , O=16 , N=14 , C=12



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7. Calculate the relative molecular masses (or molecular weights), of the following compounds :

Copper sulphate crystals, $CuSO_4 \cdot 5H_2O$



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8. Calculate the relative molecular masses (or molecular weights) of the following compounds: Ammonium sulphate, $(NH_4)_2SO_4$

Given that the relative atomic masses (in amu) of Cu = 63.5, S = 32, O = 16, N = 14 and C = 12



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9. Calculate percentage of hydrogen in water

Given that the relative atomic masses in amu of H = 1, O = 16.

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10. Calculate the percentage of nitrogen in urea NH_2CONH_2 .

Given : R.M.M. of N = 14, C = 12 , O = 16, H = 1 ?

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11. Calculate the percentage composition of various elements in :

Sodium carbonate, Na_2CO_3

Given that the relative atomic masses of O = 16, Na = 23
and C = 12.

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12. Find the percentage mass of water in washing soda
crystals $Na_2CO_3 \cdot 10H_2O$.

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Exercise 1 A

1. What is a symbol ? What information does it convey ?

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2. Why is the symbol S for sulphur, but Na for sodium and Si for silicon ?

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3. Write the full form of IUPAC. Name the elements represented by the following symbol Au.

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4. Write the full form of IUPAC. Name the elements represented by the following symbol Pb.

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5. Write the full form of IUPAC. Name the elements represented by the following symbol Sn.

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6. Write the full form of IUPAC. Name the elements represented by the following symbol Hg.

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7. If the symbol for Cobalt, Co, were written as CO, what would be wrong with it?

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8. What do the following symbol stand for H ?

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9. What do the following symbol stand for H_2 ?

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10. What do the following symbol stand for $2H$?

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11. What do the following symbol stand for $2H_2$?

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12. What is meant by atomicity ? Name a diatomic element.

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13. Explain the terms 'valency' and 'variable valency'.

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14. How are the elements with variable valency named ?

Explain with an example.



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15. Give the formula and valency of : aluminate _____



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16. Give the formula and valency of : chromate _____



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17. Give the formula and valency of : aluminium _____



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18. Give the formula and valency of : cupric _____



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19. What is a chemical formula?



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20. What is the significance of a formula ? Give an example to illustrate.



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21. What do you understand by the Acid radical ?

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22. What do you understand by the Basic radical?

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23. Select the basic and acidic radicals in the $MgSO_4$.

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24. Select the basic and acidic radicals in the $(NH_4)_2SO_4$.

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25. Select the basic and acidic radicals in the $Al_2(SO_4)_3$.

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26. Select the basic and acidic radicals in the $ZnCO_3$.

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27. Select the basic and acidic radicals in the $Mg(OH)_2$.

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28. Write chemical formulae of the sulphates of Aluminium, Ammonium and Zinc.

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29. The valency of an element A is 3 and that of element B is 2. Write the formula of the compound formed by the combination of A and B.

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30. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Barium sulphate.

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31. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Bismuth nitrate.

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32. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Calcium bromide.

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33. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Ferrous sulphide.

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34. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Chromium sulphate.

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35. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Calcium

silicate.



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36. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Stannic oxide.



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37. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Sodium zincate.



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38. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Magnesium phosphate.

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39. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Sodium thiosulphate.

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40. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Stannic

phosphate.



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41. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Nickel bisulphate.



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42. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Potassium manganate.



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43. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Potassium ferroxyanide.

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44. Write the chemical name of the $Ca_3(PO_4)_2$?

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45. Write the chemical name of the K_2CO_3 ?

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46. Write the chemical name of the K_2MnO_4 ?

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47. Write the chemical name of the $Mn_3(BO_3)_2$?

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48. Write the chemical name of the $Mg(HCO_3)_2$?

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49. Write the chemical name of the $Na_4Fe(CN)_6$?

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50. Write the chemical name of the $Ba(ClO_3)_2$?

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51. Write the chemical name of the Ag_2SO_3 ?

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52. Write the chemical name of the $(CH_3COO)_2Pb$?

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53. Write the chemical name of the Na_2SiO_3 ?

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54. Give the name of the $KClO$?

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55. Give the name of the $KClO_2$?

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56. Give the name of the $KClO_3$?

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57. Give the name of the $KClO_4$?

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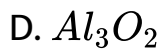
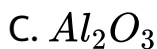
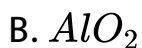
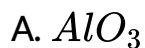
58. The formula of a compound represents

- A. an atom
- B. a particle
- C. a molecule
- D. a combination.

Answer:

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59. The correct formula of aluminium oxide is



Answer:



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60. Complete the following statements by selecting the correct option:

The valency of nitrogen in nitrogen dioxide (NO_2) is

- A. one
- B. two
- C. three
- D. four.

Answer:

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61. Give the name of the elements and number of atom of those elements, present in the following compound.

Sodium sulphate

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62. Give the name of the elements and number of atom of those elements, present in the following compound.

Quick lime



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63. Give the name of the elements and number of atom of those elements, present in the following compound.

Baking soda ($NaHCO_3$)



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64. Give the name of the elements and number of atom of those elements, present in the following compound.

Ammonia

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65. Give the name of the elements and number of atom of those elements, present in the following compound.

Ammonium dichromate

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66. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Chloride.



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67. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Oxide.



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68. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Phosphate.



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69. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Acetate.



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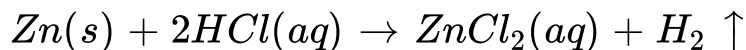
Exercise 1 B

1. What is a chemical equation? Why it is necessary to balance it?



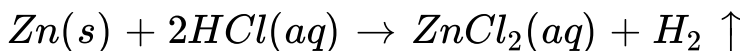
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2. State the information conveyed by the following equation.



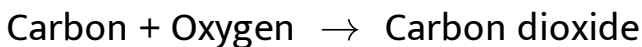
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3. What is the limitation of the reaction given



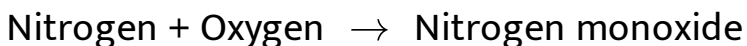
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4. Write a chemical equation for the following word equation and balance them.



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5. Write chemical equation for the following word equation and balance them.



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6. Write chemical equation for the following word equation and balance them.

Calcium + Nitrogen \rightarrow Calcium nitride

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7. Write chemical equation for the following word equation and balance them.

Calcium oxide + Carbon dioxide \rightarrow Calcium carbonate

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8. Write chemical equation for the following word equation and balance them.

Magnesium + Sulphuric acid \rightarrow Magnesium sulphate + Hydrogen

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9. Write the balanced equation for the following chemical reactions.

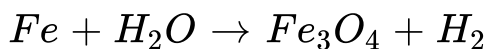
(i) Hydrogen + Chlorine \rightarrow Hydrogen chloride

(ii) Barium chloride + Aluminium sulphate \rightarrow Barium sulphate + Aluminium chloride

(iii) Sodium + Water \rightarrow Sodium hydroxide + Hydrogen

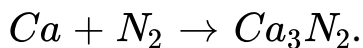
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10. Balance the following equation :



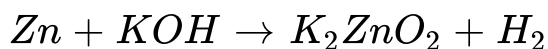
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11. Balance the following equation :



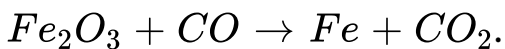
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12. Balance the following equation :



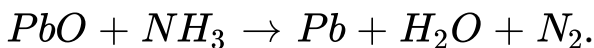
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13. Balance the following equation :



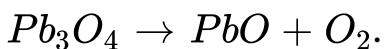
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14. Balance the following equation :



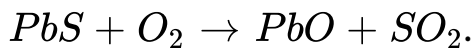
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15. Balance the following equation :



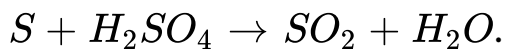
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16. Balance the following equation :



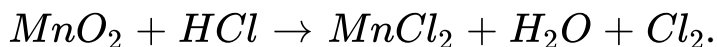
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17. Balance the following equation :



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18. Balance the following equation :



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19. Balance the following equation :



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20. Balance the following equation :



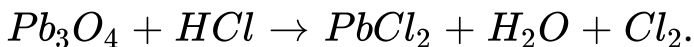
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21. Balance the following equation :



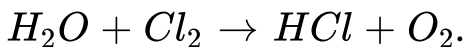
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22. Balance the following equation :



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23. Balance the following equation :



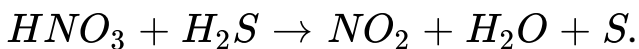
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24. Balance the following equation :



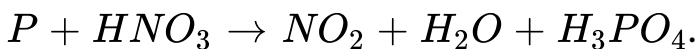
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25. Balance the following equation :



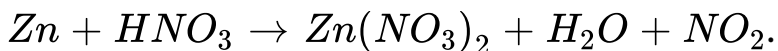
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26. Balance the following equation :



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27. Balance the following equation :



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Exercise 1 C Fill In The Blanks

1. Dalton used symbol for oxygen and for hydrogen.

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2. Symbol representsatom of an element.

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3. Symbolic expression for a molecule is called

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4. Sodium chloride has two radicals. Sodium is a radical while chloride is a radical.

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5. Oxidation state of phosphorus in PCl_3 is and in PCl_5 is

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6. Valency of Iron in $FeCl_2$ is and in $FeCl_3$ it is

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7. Formula of iron (III) carbonate is

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Exercise 1 C

1. Complete the following table :

S.No.	Molecular formula	Condensed formula	Structural formula	Common name
1.	HCHO			
2.	CH ₃ COOH			
3.	CH ₃ OH			
4.	CH ₃ CHO			
5.	C ₂ H ₅ OH			
6.	C ₂ H ₂			

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2. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

Write the equation.

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3. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

Check whether it is balanced, if not balance it.

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4. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

Find the weights of reactants and products.

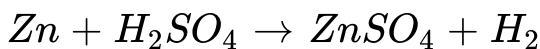
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5. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

State the law that this equation satisfies.

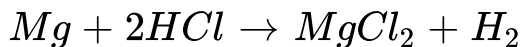
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6. What information does the following chemical equations convey?



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7. What information does the following chemical equations convey?



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8. What are poly atomic ions? Give two examples?

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9. Name the fundamental law that is involved in every equation.

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10. What is the valency of :

fluorine in CaF_2



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11. What is the valency of :

sulphur in SF_6



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12. What is the valency of :

phosphorus in PH_3



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13. What is the valency of carbon?

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14. What is the valency of :

nitrogen in the N_2O_3

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15. What is the valency of :

nitrogen in the N_2O_5 .

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16. What is the valency of :

nitrogen in the NO_2



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17. What is the valency of :

nitrogen in the NO



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18. What is the oxidation state of :

Manganese in MnO_2



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19. What is the oxidation state of :

Copper is Cu_2O

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20. What is the oxidation state of :

Magnesium in Mg_3N_2 .

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21. Why should an equation be balanced ? Explain with the help of a simple equation.

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22. Write the balanced chemical equation of the following word equation.

Sodium hydroxide + sulphuric acid \rightarrow sodium sulphate + water

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23. Write the balanced chemical equation of the following word equation.

Potassium bicarbonate + sulphuric acid \rightarrow potassium sulphate + carbon dioxide + water

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24. Write the balanced chemical equation of the following word equation.

Iron + sulphuric acid \rightarrow ferrous sulphate + hydrogen

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25. Write the balanced chemical equation of the following word equation.

Chlorine + sulphur dioxide + water \rightarrow sulphuric acid +
hydrogen chloride

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26. Write the balanced chemical equation of the following word equation.

Silver nitrate \rightarrow silver + nitrogen dioxide + oxygen

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27. Write the balanced chemical equation of the following word equation.

Copper + nitric acid \rightarrow copper nitrate + nitric oxide + water

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28. Write the balanced chemical equation of the following word equation.

Ammonia + oxygen \rightarrow nitric oxide + water

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29. Write the balanced chemical equation of the following word equation.

Barium chloride + sulphuric acid \rightarrow barium sulphate + hydrochloric acid

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30. Write the balanced chemical equation of the following word equation.

Zinc sulphide + oxygen \rightarrow zinc oxide + sulphur dioxide

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31. Write the balanced chemical equation of the following word equation.

Aluminium carbide + water \rightarrow aluminium hydroxide + methane

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32. Write the balanced chemical equation of the following word equation.

Iron pyrites (FeS_2) + oxygen \rightarrow ferric oxide + sulphur dioxide

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33. Write the balanced chemical equation of the following word equation.

Potassium permanganate + hydrochloric acid \rightarrow potassium chloride + manganese chloride + chlorine + water

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34. Write the balanced chemical equation of the following word equation.

Aluminium sulphate + sodium hydroxide \rightarrow sodium sulphate + sodium meta aluminate + water



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35. Write the balanced chemical equation of the following word equation.

Aluminium + sodium hydroxide + water \rightarrow sodium meta aluminate + hydrogen



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36. Write the balanced chemical equation of the following word equation.

Potassium dichromate + sulphuric acid \rightarrow potassium sulphate + chromium sulphate + water + oxygen

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37. Write the balanced chemical equation of the following word equation.

Potassium dichromate + hydrochloric acid \rightarrow potassium chloride + chromium chloride + water + chlorine

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38. Write the balanced chemical equation of the following word equation.

Sulphur + nitric acid \rightarrow sulphuric acid + nitrogen dioxide
+ water

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39. Write the balanced chemical equation of the following word equation.

Sodium chloride + manganese dioxide + sulphuric acid
 \rightarrow sodium hydrogen sulphate + manganese sulphate +
water + chlorine

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40. Define atomic mass unit.

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41. Calculate the molecular mass of the $N_2SO_4 \cdot 10H_2O$

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14,

Mg = 24, S = 32

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42. Calculate the molecular mass of the $(NH_4)_2CO_3$.

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14,

Mg = 24, S = 32

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43. Calculate the molecular mass of the $(NH_2)_2CO$

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14,

Mg = 24, S = 32

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44. Calculate the molecular mass of the Mg_3N_2 .

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14,

Mg = 24, S = 32

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Exercise 1 C Choose The Correct Answer

1. Modern atomic symbols are based on the method proposed by

A. Bohr

B. Dalton

C. Berzelius

D. Alchemist

Answer:



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2. The number of carbon atoms in a hydrogen carbonate radical is

A. one

B. two

C. three

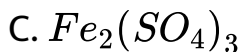
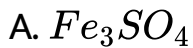
D. four

Answer:



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3. The formula of iron (III) sulphate is



D. $FeSO_4$

Answer:

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4. In water, the hydrogen-to-oxygen mass ratio is

A. 1 : 8

B. 1 : 16

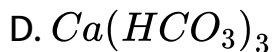
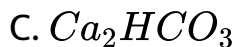
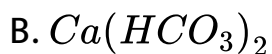
C. 1 : 32

D. 1 : 64

Answer:

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5. The formula of sodium carbonate is Na_2CO_3 and that of calcium hydrogen carbonate is



Answer:



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Exercise 1 C Correct The Following Statement

1. Correct the statement : A molecular formula represents an element.

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2. Molecular formula of water is H_2O_2 .

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3. A molecule of sulphur is monoatomic.

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4. CO and Co both represent cobalt.

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5. Correct the statement : Formula of iron (III) oxide is FeO .

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6. Calculate the relative molecular mass of : Chloroform
 $[CHCl_3]$

[H=1, Cl=35.5 , C=12]

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7. Calculate the relative molecular mass of : Ammonium dichromate $[(NH_4)_2Cr_2O_7]$

[H=1 , N=14 , O=16, Cr=52]



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8. Calculate the relative molecular mass of $CuSO_4 \cdot 5H_2O$

[At mass: C = 12, H = 1, O = 16, Cl = 35.5, N = 14, Cu = 63.5, S = 32, Na = 23, K = 39, Pt = 195, Ca = 40, P = 31, Mg = 24]



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9. Calculate the relative molecular mass of $(NH_4)_2SO_4$.

[At mass: C = 12, H = 1, O = 16, Cl = 35.5, N = 14, Cu = 63.5, S =

32, Na = 23, K = 39, Pt =195, Ca =40, P=31, Mg = 24]

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10. Calculate the relative molecular mass of CH_4COONa

[At mass: C = 12, H = 1, O = 16, Cl = 35.5, N = 14, Cu = 63.5, S =

32, Na = 23, K = 39, Pt =195, Ca =40, P=31, Mg = 24]

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11. Calculate the relative molecular mass of : Potassium
Chlorate [$KClO_3$]

[O=16, Cl=35.5, K=39]

 [Watch Video Solution](#)

12. Calculate the relative molecular mass of Ammonium chloroplatinate $(NH_4)_2PtCl_6$.

[At mass: C = 12, H = 1, O = 16, Cl = 35.5, N = 14, Cu = 63.5, S = 32, Na = 23, K = 39, Pt = 195, Ca = 40, P = 31, Mg = 24]

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13. Give the empirical formula of Benzene (C_6H_6).

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14. Give the empirical formula of Glucose ($C_6H_{12}O_6$).

 [Watch Video Solution](#)

15. Give the empirical formula of Acetylene (C_2H_2).

 [Watch Video Solution](#)

16. Give the empirical formula of Acetic acid (CH_3COOH)

 [Watch Video Solution](#)

17. Find the percentage mass of water in Epsom salt
 $MgSO_4 \cdot 7H_2O$.

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18. Calculate the percentage of phosphorus in Calcium hydrogen phosphate $Ca(H_2PO_4)_2$.

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19. Calculate the percentage of phosphorus in Calcium phosphate $Ca_3(PO_4)_2$.

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20. Calculate the percentage composition of each element in Potassium chlorate, $KClO_3$.

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21. Urea is a very important nitrogenous fertilizer. Its formula is CON_2H_4 . Calculate the percentage of carbon in urea.

(C = 12, O = 16, N = 14 and H = 1)

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Topic 1 Element Radicals And Formulae 1 Mark Questions

1. The molecular formula of ammonium sulphate is _____.

$[NH_4SO_4 / (NH_4)_2SO_4]$

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2. For an element, symbol represent ____ atom. [one/two]

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3. Symbol used by Berzelius for oxygen is [O] and _____ for hydrogen. [H/O]

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4. If an element shows two different positive valencies, then for the lower valency the suffix _____ is used. ["ous"/"ic"]

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5. Basic radical formed by aluminium _____ [Al^{2+} / Al^{3+}]

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6. Latin name for tin is _____ [Stannum/Stabium]

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7. The formula for bisulphite is _____ [HS^- / HSO_3^-]

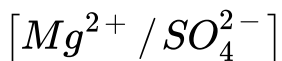
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8. The symbol of uranium is _____ [U/Ur]

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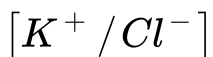
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9. The example of compound radical is _____



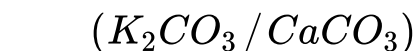
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10. The basic radical in potassium chloride is _____



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11. A carbonate that does not decompose on heating is



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12. The formula of a compound represents

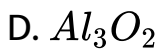
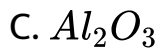
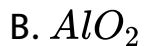
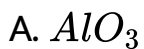
- A. an atom
- B. a particle
- C. a molecule
- D. a combination

Answer: C



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13. The correct formula of aluminium oxide is



Answer: C



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14. The valency of nitrogen in nitrogen dioxide (NO_2) is

A. One

B. two

C. three

D. four

Answer: D

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15. Match the following

Column A

Column B

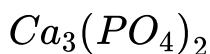
- | | |
|----------------------------|----------------------------|
| (i) Boric acid | A. PH_3 |
| (ii) Nitrous acid | B. SiO_2 |
| (iii) Phosphine | C. H_2SO_3 |
| (iv) Sulphuric acid | D. H_3BO_3 |
| (v) Sulphurous Acid (Sand) | E. HNO_2 |

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16. What is meant by atomicity ? Name a diatomic element ?

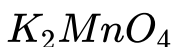
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17. Write the chemical names of the following compounds.



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18. Write the chemical names of the following compounds.



 [Watch Video Solution](#)

19. What is a symbol?

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20. Why is the symbol S for sulphur, but Na for sodium and Si for silicon ?

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21. Explain the terms 'valency' and 'variable valency'.

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22. Write the chemical formula of the sulphate of aluminium and zinc .

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23. Who proposed the method of using modern atomic symbols?

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24. What is a chemical formula?

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25. Write full form of IUPAC

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26. Name the elements represented by the following symbols : Ag,Hg

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27. Match the following

	Column A		Column B
(i)	Silica	A	NaHCO_3
(ii)	Caustic Soda	B	SiO_2
(iii)	Washing Soda	C	NaOH
(iv)	Baking Soda	D	CaCO_3
(v)	Lime Stone	E	Na_2CO_3



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Topic 1 Element Radicals And Formulae 2 Marks Questions

1. What do you understand by the following terms?

Acid radical



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2. What do you understand by the following terms?

Basic radical



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3. What is the formula of iron (III) sulphate?

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4. Chemical formula of sodium carbonate is Na_2CO_3 then what would be the formula of calcium hydrogen carbonate.

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5. Write the valency of carbon in C_2H_6 & C_2H_2

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6. Write one example of each of the following:-

Monoatomic molecules

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7. Write one example of each of the following:-

Triatomic molecules

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8. Write one example of each of the following:-

Tetra atomic molecules

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9. Write one example of each of the following:-

Octa atomic molecules

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10. Correct the following statement:

An element is represented by molecular formula.

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11. Correct the following statement:

Co and CO both represents carbon monoxide.

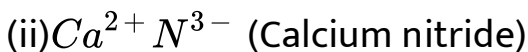
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12. Based on the symbols with valencies & charges write the formula of the following compounds



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13. Based on the symbols with valencies & charges write the formula of the following compounds



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Topic 1 Element Radicals And Formulae 3 Marks Questions

1. The formula of the chloride of a metal .M. is MCl_2 . State the formula of its Carbonate

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2. The formula of the chloride of a metal .M. is MCl_2 . State the formula of its Nitrate

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3. The formula of the chloride of a metal .M. is MCl_2 . State the formula of its Hydroxide



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4. Complete the following table .

Acidic Radicals → Basic Radicals ↓	Chloride	Nitrate	Sulphate
Magnesium	$MgCl_2$	$Mg(NO_3)_2$	
Zinc		$Zn(NO_3)_2$	$ZnSO_4$
Potassium	KCl		K_2SO_4

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5. Identify the acidic or basic radicals in the following compounds :

Acidic radicals in $MgCO_3$

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6. Identify the acidic or basic radicals in the following compounds :

Basic Radicals in $Ag_2SO_3(I)$

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7. Identify the acidic or basic radicals in the following compounds :

Acidic Radicals in $FePO_4(III)$

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8. Write the name of the following compounds: NaClO

 [Watch Video Solution](#)

9. Write the name of the following compounds: $NaClO_3$

 [Watch Video Solution](#)

10. Write the name of the following compounds: $NaClO_4$

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11. Identify the symbol

N

 [Watch Video Solution](#)

12. Identify the symbol



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13. Identify the symbol



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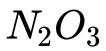
14. Give the formula of :

	Formula	Valency
(1) Oxalate	_____	_____
(2) Chromate	_____	_____
(3) Phosphide	_____	_____



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15. What is the valency of N in following compounds.



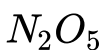
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16. What is the valency of N in following compounds.



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17. What is the valency of N in following compounds.



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18. Give the example of Trivalent electropositive ion

 [Watch Video Solution](#)

19. Give the example of Trivalent electronegative ion

 [Watch Video Solution](#)

20. Give the example of Divalent electropositive ion

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21. Write the formula for :

Sodium bisulphate :

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22. Give the formulae of Ammonium nitrate

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23. Give the formulae of Magnesium nitride

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1. What are poly atomic ions? Give two examples?

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2. What is the valency of Fluorine in CaF_2

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3. What is the valency of Sulphur in SF_6

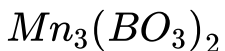
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4. What is the valency of Carbon in CH_4

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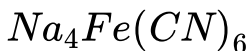
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5. Write the chemical name of the following compounds



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6. Write the chemical name of the following compounds



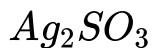
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7. Write the chemical name of the following compounds



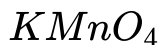
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8. Write the chemical name of the following compounds



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9. Write the chemical name of the following compounds

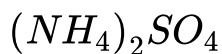


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10. Select the basic and acidic radicals in the $MgSO_4$.

 [Watch Video Solution](#)

11. Select the basic and acidic radicals in the following compounds



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12. Select the basic and acidic radicals in the $Al_2(SO_4)_3$.



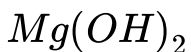
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13. Select the basic and acidic radicals in the following compounds



 Watch Video Solution

14. Select the basic and acidic radicals in the following compounds



 Watch Video Solution

15. Complete the following table .

Acidic Radicals → Basic Radicals ↓	Chloride	Nitrate
Magnesium	$MgCl_2$	$Mg(NO_3)_2$
Sodium		
Zinc		
Silver		
Ammonium		
Calcium		

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Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 1 Mark Questions

1. Define atomic mass unit.

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2. Give the empirical formula of Benzene (C_6H_6).

 [Watch Video Solution](#)

3. What is the empirical formula of $C_6H_{12}O_6$

 [Watch Video Solution](#)

4. Give the empirical formula of Acetic acid (CH_3COOH).



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5. Name the fundamental law that is involved in every equation.



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Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 2 Marks Questions

1. What is the empirical formula mass ? What is empirical formula mass of H_2O_2

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2. In a reaction between $NaCl$ and $AgNO_3$ which results in formation of $AgCl$ & $NaNO_3$, find the weight of reactants & products.

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3. Calculate the percentage of nitrogen in ammonium nitrate. [NH_4NO_3] [N=14 , H=1, O=16]

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4. Find the percentage of Phosphorus in Calcium hydrogen Phosphate

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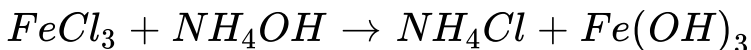
5. Calculate the percentage of phosphorus in Calcium phosphate $Ca_3(PO_4)_2$.

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6. Find the percentage of oxygen in CO_2 [C = 12, O = 16]

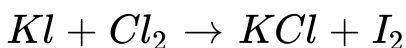
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7. Balance each of the chemical equations given below :



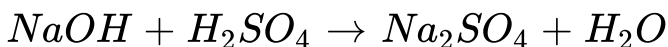
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8. Balance each of the chemical equations given below :



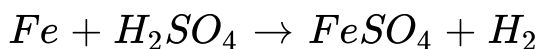
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9. Balance each of the chemical equations given below :



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10. Balance each of the chemical equations given below :



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11. Calculate the relative molecular mass of : Ammonium dichromate $[(NH_4)_2Cr_2O_7]$

[H=1 , N=14 , O=16, Cr=52]

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12. Calculate the relative molecular mass of $CuSO_4 \cdot 5H_2O$

[At mass: C = 12, H = 1, O = 16, Cl = 35.5, N = 14, Cu = 63.5, S = 32, Na = 23, K = 39, Pt = 195, Ca = 40, P = 31, Mg = 24]

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13. Calculate the relative molecular mass of : Potassium Chlorate [$KClO_3$]

[O=16, Cl=35.5, K=39]

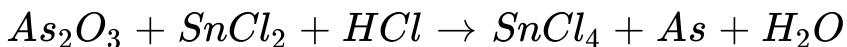
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14. Calculate the relative molecular mass of : Chloroform [$CHCl_3$]

[H=1, Cl=35.5, C=12]

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15. Balance the following equations



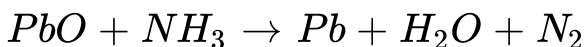
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16. Balance the following equations



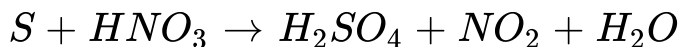
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17. Balance the chemical equations



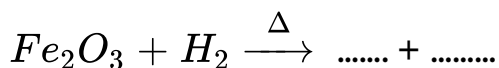
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18. Balance the chemical equations



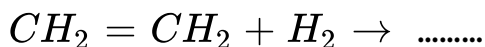
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19. Complete and balance the following reactions :



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20. Complete and balance the following reactions :



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21. Write balanced equations of the following :

Aluminium Sulphate + Sodium hydroxide \rightarrow Aluminium hydroxide + Sodium Sulphate

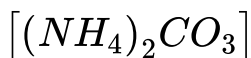
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22. Write balanced equations of the following :

Silver nitrate \rightarrow silver + nitrogen dioxide + oxygen

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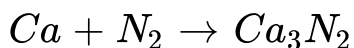
23. Calculate the molecular mass of ammonium carbonate



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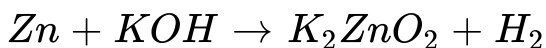
Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 3 Marks Questions

1. Balance the following equations



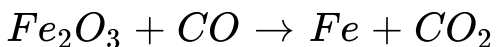
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2. Balance the following equation :



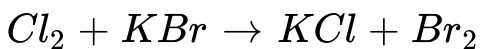
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3. Balance the following equations



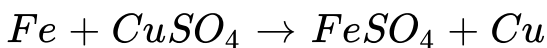
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4. Write balanced chemical equations for each of the following



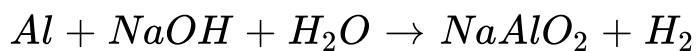
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5. Write balanced chemical equations for each of the following



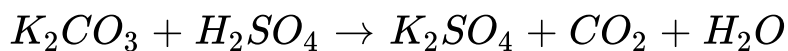
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6. Write balanced chemical equations for each of the following



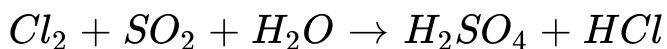
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7. Balance the chemical equations :



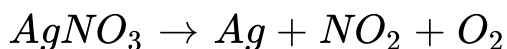
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8. Balance the chemical equations :



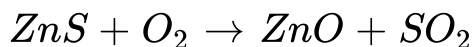
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9. Balance the chemical equations :



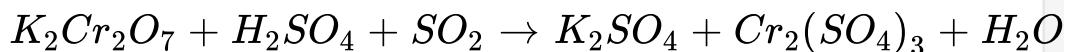
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10. Balance the equations given below :



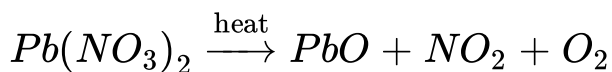
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11. Balance the equations given below :



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12. Balance the equations given below :



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13. Write balanced chemical equations for each of the following :

Reaction of iron with chlorine

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14. Write balanced chemical equations for each of the following :

Addition of silver nitrate solution to sodium chloride solution.

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15. Write balanced chemical equations for each of the following :

Addition of zinc to sodium hydroxide solution.

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16. Deduce the mass percentage of water in $MgSO_4 \cdot 7H_2O$ (Epsom salt)

Atomic masses of Mg = 24 , S= 32 , O=16 , H=1

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17. Calculate the percentage mass of water in crystals of washing soda.

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18. Write balanced chemical equation for each of the following :

Aluminium carbide + water \rightarrow Aluminium hydroxide +
Methane

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19. Write balanced chemical equation for each of the following :

Iron Pyrites (FeS_2) + Oxygen \rightarrow Ferric Oxide + Sulphur dioxide

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20. Write balanced chemical equation for each of the following :

Potassium permanganate + hydrochloric acid \rightarrow

Potassium Chloride + Manganese Chloride + Chlorine
+Water

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21. Write balanced chemical equation for each of the following :

Ammonia reacts with Oxygen

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22. Write balanced chemical equation for each of the following :

Copper reacts with Nitric acid

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23. Write balanced chemical equation for each of the following :

Lead sulphide reacts with Oxygen

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24. Urea is a very important nitrogenous fertiliser. Its formula is CON_2H_4 . Calculate the percentage of nitrogen in urea. (C = 12, O = 16, N = 14 and H = 1)

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25. Calculate the percentage of nitrogen in urea NH_2CONH_2 .

Given : R.M.M. of N = 14, C = 12 , O = 16, H = 1 ?

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26. Calculate the percentage of water molecules in hydrated calcium sulphate .

[Ca=40 , S=32 , O=16 , H=11]

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Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 5 Marks Questions

1. Calculate the percentage composition of various elements in :

Sodium carbonate, Na_2CO_3

Given that the relative atomic masses of O = 16, Na = 23 and C = 12.

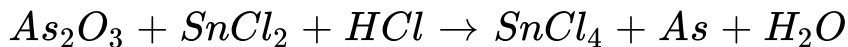
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2. Write the balanced chemical equation of the following word equation.

Sodium chloride + manganese dioxide + sulphuric acid
→ sodium hydrogen sulphate + manganese sulphate +
water + chlorine

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3. Explain the balancing of the given equation by hit and trial method.



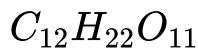
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4. Calculate the relative molecular masses (or molecular weights) of the following compounds: Ammonium sulphate, $(NH_4)_2SO_4$

Given that the relative atomic masses (in amu) of Cu = 63.5, S = 32, O = 16, N = 14 and C = 12

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5. Calculate the relative molecular masses (or molecular weights) of the following compounds : Cane sugar ,



Given that the relative atomic mass (in amu) of Cu = 63.5 ,

S=32 , O=16 , N=14 , C=12



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6. Calculate percentage of hydrogen in water

Given that the relative atomic masses in amu of H = 1, O =

16.



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7. Calculate the percentage composition of various elements in :

Sodium carbonate, Na_2CO_3

Given that the relative atomic masses of O = 16, Na = 23 and C = 12.

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8. Give the empirical formula of acetylene (C_2H_2)

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